

A REMARKABLE RANGE EXTENSION FOR THE FISHFLY GENUS *DYSMICOHERMES* (MEGALOPTERA: CORYDALIDAE)¹

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ABSTRACT: The megalopteran genus *Dysmicohermes* (Corydalidae: Chauliodinae), previously known only from the Pacific Coast Region of the United States and adjacent Canada, is recorded for the first time in southeastern United States (Mission, Texas). The external genitalia of the single female Texan specimen most closely resemble those of *D. ingens*. However, differences in wing color pattern and body size, as well as the disjunct occurrence, suggest that the Texas specimen might belong to a third and new *Dysmicohermes* species. Survey work in southern Texas and adjacent Mexico is required in order to determine the taxonomic position, and to assess the conservation status of this previously unknown fishfly.

Fishflies of the genus *Dysmicohermes* (Corydalidae: Chauliodinae) are among the most impressive North American megalopterans. They have an average wing span of 120 mm (Evans 1972), which is comparable to a large *Corydalus* dobsonfly (Corydalidae: Corydalinae). Besides their large size, *Dysmicohermes* fishflies can be easily distinguished by having a 4-branched M vein in the hindwing (Evans and Neunzig 1984, New and Theischinger 1993) and by the presence of dense, long, curly hair on the thorax (Evans 1972). The two specimens I observed have hairs also on the head and coxae. Larvae of *Dysmicohermes* can be separated from other megalopteran genera with the keys by Evans and Neunzig (1984) and Neunzig and Baker (1991). Two species, *Dysmicohermes disjunctus* (Walker) and *D. ingens* Chandler, are presently included in the genus. Both species appear to be rather infrequently collected. *Dysmicohermes disjunctus* is known from central California in the Sierra Nevada Mountains north to southern British Columbia, and *D. ingens* has been found only from several localities in the Sierra Nevada and San Bernardino Mountains of California (Evans 1972).

Recently I borrowed Megaloptera specimens from the University of Missouri, Columbia, as part of a taxonomic study of the genus *Corydalus*. A single large female specimen of a fishfly, which keyed out perfectly to *Dysmicohermes*, immediately called my attention. Moreover, the town of Mission, located in extreme southern Texas near the Rio Grande, was given as the collecting site. Knowing this genus is western, I inquired of Dr. Robert W. Sites (Museum Director at Missouri) as to the authenticity of the record and whether additional specimens were available. Dr. Sites (personal communication) contacted Dr. Wilbur Enns, former Museum Director, who informed him

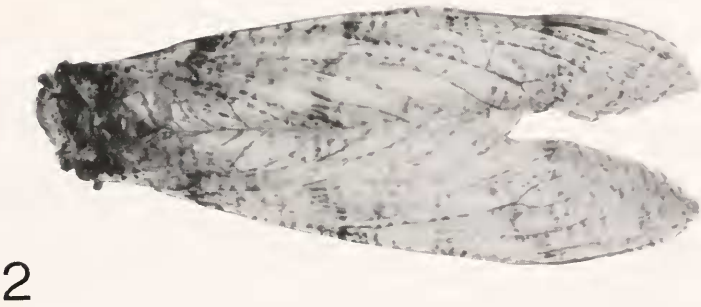
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that Hans J. Bock (the collector) was the son of George Bock, M.D., who had donated approximately a third of a million beetles to their museum and was regarded as an excellent collector. Moreover, Mr. Hans Bock, now deceased, lived in Mission, Texas. Dr. Enns considered it is a virtual certainty that the label data are correct. Unfortunately, I have not encountered additional *Dysmicohermes* specimens from that area in material from other museums. Dr. David E. Bowles (Texas Parks and Wildlife Department, personal communication) has inspected personally the collection at Texas A & M University and has done extensive field work in Texas, in both instances without having seen *Dysmicohermes* specimens. Dr. Bowles is organizing collecting efforts around Mission hoping to find adults and larvae of these organisms. Despite the absence of corroborating specimens, I consider almost certain that the record is valid, and very probable that the eastern specimen belongs to a third species of *Dysmicohermes*.

The external genitalia of the Texas specimen, with the lower lobe of the 10th tergite (clasper sensu Evans 1972) longer than the upper lobe, corresponds to *D. ingens* (Evans 1972). However, the Texas specimen appears to be above the size range of *D. ingens* and its wing color pattern clearly differs from that of *D. ingens* (Figs. 1 and 2). The Texas specimen has a pale brown, almost uniform coloration. Its forewings have very small maculations along the basal (posterior) branch of Rs, as well as at mid length of Cu and along Cu₂. The base of the Sc cell and the area surrounding the elevation on 1A are dark purplish. Its hindwings are similar to the forewings, but lack almost entirely any maculations. Also, the Texas specimen has the first three abdominal segments covered with long hairs, more conspicuous dorsally. The specimen of *D. ingens*, borrowed from the Smithsonian Institution for comparison, has its wings noticeably more maculated. They have small maculations along most longitudinal veins, larger spots on the cells, and a pattern of three cross bands (areas of denser maculation) at the base, midlength, and towards the apex of the wing. The elevated portion of 1A and its surrounding area are also dark purplish, but the colored area is more extensive than in the Texas specimen. The hindwing seems to have a pattern of color similar to the forewing (the specimen is fairly brittle and does not have its wings spread). Long hairs are absent on abdominal segments.

As a second step, now we need to know whether there are viable populations of the *Dysmicohermes* in Texas. Finding male specimens is crucial to clarifying its taxonomic status and providing the basis for a formal description, thus facilitating conservation efforts. According to Dr. Bowles (personal communication), aquatic habitat prospects are not very good in the Mission area. The Rio Grande is seriously degraded in its reach near Mission. There are, however, irrigation canals, a lake, and intermittent streams in the immediate vicinity of Mission. Evans (1972) reported that *Dysmicohermes* larvae inhabit



Figs. 1-2 Habitus: 1, *Dysmicohermes* sp. from Texas, female; 2, *D. ingens* Chandler, female.

sometimes small streams that dry up in late summer. It is conceivable then that viable populations of the Texas form live in this type of habitat. Collecting efforts for larvae and adults are needed in southeastern Texas and adjacent Mexico. It should be kept in mind that *Dysmicohermes* adults are reluctant to come to lights, so diurnal collecting and rearing from larvae needs to be undertaken. Finally, the disjunct occurrence of the Texas *Dysmicohermes* poses an interesting biogeographical problem to be explained. Is this pattern a reflection of a former biota extending from west to east along what is now the Rio Grande basin? *Corydalus texanus* Banks might fit a similar pattern. This is a western North American species known to occur, historically at least, as far east as Laredo, Texas. Laredo is not too far from Mission and lies in the same drainage system. Of course an isolated dispersal event forms an alternative explanation.

Material examined:

Dysmicohermes ingens Chandler. — UNITED STATES: CALIFORNIA: El Dorado Co., nr. Whitehall, 21.vi.[19]31, L. Saylor, 1 ♀ [head width = 5.40 mm, forewing length = 55.35 mm] (NMNH).

Dysmicohermes sp. — UNITED STATES: TEXAS: [Hidalgo Co.], Mision, 28.ix.1961, H. J. Bock, 1 ♀ [head width = 6.55 mm, forewing length = 69.20 mm, wingspan approx. 137 mm] (UMC).

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